



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/723,833

11/26/2003

Noel Hatsch

1890-0016

9281

7590

02/02/2006

Maginot, Moore & Beck
Bank One Tower
Suite 3000
111 Monument Circle
Indianapolis, IN 46204

EXAMINER

TRAN, MICHAEL THANH

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. In response to the Communications dated November 26, 2003 through April 30, 2004, claims 1-18 are active in this application.

Foreign Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on November 26, 2002. It is noted, however, that applicant has not filed a certified copy of the German application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

3. Our records show that there are no IDS filed thus far.

Claim Objections

4. Claims 2-13 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections – 35 U.S.C. § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

Art Unit: 2827

patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 14 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lien et al. [U.S. Patent # 6,421,265] in view of Helwig et al. [U.S. Patent # 6,353,548].

Lien et al. discloses a CAM [content addressable memory] apparatus [Figure 3a] comprising: a first memory device [110b] with a word line input [WW1] and at least one storage node [SN1] for storing a first bit of a data word; a second memory device [110a] with a word line input [WW2] and at least one storage node [SN2] for storing a second bit of a data word; and a comparator device [120a] for comparing the first and second stored bits with precoded comparison bits fed via D# and D and for driving a hit node [MATCH] in the event of the first stored bit corresponding to the first comparison bit and the second stored bit corresponding to the second comparison bit [see columns 8 and 9]. *In the cited section, Lien et al. states that the match line would be charged or discharged depending upon the results of the comparison device.*

Lien et al. discloses all of the above mentioned but is silent about the fact that the comparator device contains more than two inputs. However, Figure 3 of Helwig et al. shows that it is well known and necessary to have a comparator device [301] with more than two inputs to enable faster operational performance [see columns 1 and 2]. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Lien et al. comparator device to include a more than two inputs as taught by Helwig et al., since Helwig et al. show that it is well known

Art Unit: 2827

and desirable in the art to provide a comparator device with more inputs to allow a faster comparison of input data with compare data [see Abstract and columns 1 and 2].

With respect to claim 14, Lien et al. disclose, in figure 3a, that the comparator device [120a] has a holding device [matchline] for maintaining a signal level at the hit node. *As stated above, depending on the results of the comparison device, if there's a match between the data, the matchline will be maintained at a charged level [see column 8].*

With respect to claim 18, Lien et al. disclose, in figure 1c, memory devices [32 and 34] are in each case constructed identically and in each case have six transistors, four of which [32 – p21, p22, n21 and n22; 34 – p26, p25, n26 and n25] form two antiparallel inverters. It is also noted that according to Lien et al., figures 1c and 3a are functionally equivalent – see columns 3-9.

Allowable Subject Matter

7. The following is an Examiner's statement of reasons for the indication of allowable subject matter: the prior art of records does not show (in addition to the other elements in the claim) the following:

- The comparator device has four signal paths each having three transistors between a supply voltage and the hit node.
- The holding device has three transistors, of which a first transistor of the three transistors and a second transistor of the three transistors form an inverter, the

Art Unit: 2827

input of which is connected to the hit node, and the output of which is connected to a gate of a third transistor of the three transistors.

- A circuit that is upstream of the CAM apparatus generates the two precoded comparison bits and can be operated statically or dynamically.
- Both a downstream series pass gate hit path and a wired-Or hit path can be driven via the hit node.

Conclusion

8. When responding to the Office action, Applicants are advised to provide the Examiner with line and page numbers of the application and/or references cited to assist the Examiner in the prosecution of this case.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael T. Tran whose telephone number is (571) 272-1795. The Examiner can normally be reached on Monday-Thursday from 7:30-6:00 P.M.

10. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1650.



Michael T. Tran
Art Unit 2827
January 31, 2006

MICHAEL T. TRAN

Principal Examiner